ISFSI

INSTRUCT-O-GRAM

THE HANDS-ON TRAINING GUIDE FOR THE FIRE INSTRUCTOR

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DECONTAMINATION CONSIDERATIONS FOR EMERGENCY MEDICAL SERVICES TASK

The U.S. Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) have mandated training for emergency responders to hazardous materials incidents. NFPA and many states have established specific training standards for first responders. It is extremely important, for legal and administrative reasons to maintain accurate documentation of each incident, each drill and training session to include the date, time, location, objectives, performance, attendance and other information that may be required based on department requirements. Attendance should be recorded by having students sign an attendance log.

It is recommended that records also be kept in personnel files of training, testing and certifications. This is to indicate the level of competency.

Consult local, state and departmental regulations for additional documentation and training requirements.

Objectives

1. Define decontamination and explain why it is important
2. List and describe five methods of decontamination.
3. Identify the different methods of which exposure can occur.
4. Identify the contaminate properties.
5. Demonstrate how to initiate and perform basic decontamination.
6. Explain termination factors.
7. Describe common house keeping techniques to prevent contamination.

Instructional Aids

- Each student needs personal protective clothing
- Decontamination videos
- Associated props for decontamination
- Video Camera for critique

Estimated Teaching Time

Lecture	2 hours
Practical	per student need

Motivating the Student

Last year the fire service in the United States had 112 line of duty deaths, that's one death every 3.25 days. The relationship between bread and butter operations of structural response incidents and hazardous materials responses are growing ever closer each minute of each day. It is conceivable to consider every structure fire response a hazardous materials incident due to the types of products that are used to produce house- hold items, cleaning supplies and the combination of compounds that occur during the combustion process. It is imperative that we rethink the way that we do business, especially the business of Emergency Medical transports from emergency and fire scenes. This program is designed to help personnel recognize the importance of decontamination of more than just "hazardous materials incident" victims.

Presentation

I. Need for Decontamination

A. Protection of Personnel
   1. EMS
   2. Hospital

B. Protection of Victims
   1. Properties of Contamination
   2. Body Parts
      - eyes
      - skin condition
      - hair
   3. Duration of Contamination
   4. Decontamination Actions

C. Protect Equipment
   1. Properties of Contamination
   2. Properties of Equipment
   3. Method of Contamination
   4. Duration of Contamination
   5. Decontamination Factors
   6. Properties of Equipment
      - Synthetic
      - Non-synthetic
      - Porous
      - Non-porous
      - Permeability
      - Value

D. Protect Environment

II. How Contamination Occurs

A. Environment
   1. Leaks
   2. Spills
   3. Gas releases

B. Personnel
   1. Inhalation
   2. Ingestion
   3. Absorption
   4. Injections

III. Properties of Contamination

A. Physical states
   1. Solid (particle size)
   2. Liquid (viscosity)
   3. Gaseous (vapor pressure)

B. Properties
   1. Toxicity
      - As measured by LD 50
   2. Corrosivity
      - ph of material

3. Vapor Pressure (mm Hg @ temperature)
   - Diesel fuel <2
   - Gasoline ~760
   - Chlorine ~4996

IV. Methods of Contamination

A. Direct Contact

1. Highly unlikely as an EMS personnel

B. In-direct Contact

1. Responder to equipment
2. Responder to victim

** Contamination is directly related to the duration of exposure. It is important to have the time or duration of the exposure.

V. Decontamination Actions

A. Preventive

1. Pre-plan response
2. *Don't become contaminated*
3. Perform Gross decontamination at scene
4. Limited contact with sensitive equipment
5. Use barriers when necessary

B. Response

1. Chemical specific
2. Responder protection
3. Ventilation considerations
4. Protect environment

C. Detection

1. Explosion meter
2. ph Paper
3. Water solution for GC (Gas Concentration) Analysis

D. Evaluation

1. Based on detectable limits

VI. Decontamination Procedures

A. Dilution

B. Absorption

C. Chemical Degradation

D. Isolation

E. Disposal

V. Decontamination Solutions

A. For Inorganic Acids, heavy metals, lead, mercury, cadmium

1. Mix 2 gallons of water + 1 lb. 5% sodium carbonate + 1 lb 5% tri-sodium phosphate

B. Pesticides, chlorinated phenol, cyanides, ammonia

1. Mix 2 gallon of water + 2 lbs. 5% calcium hypochlorite (stir with wood)

C. Solvents, organic compounds, methanol, chloroform, toluene

1. Mix 2 gallon water + 5% trisodium phosphate

D. Inorganic bases, alkali, caustic wastes

1. Mix 2 gallon water with .3 cups hydrochloric acid

E. General Cleaning

1. Mix 2 gallons water + 16 ounces dish washing detergent
   - Preferred by EPA
   - Sufficient in most cases

VI. Decontamination Procedures

A. Personnel

1. Entry team
2. Decontamination personnel
3. EMS personnel
4. Hospital personnel

B. Victims

1. Medical help
2. Transportation

C. Equipment

1. Protective clothing
2. Apparatus
3. Care giving equipment

VII. Termination Procedures

A. Incident debriefing

B. Incident critique

VIII. Incident Documentation

A. Training documentation

B. Exposure records

C. Incident site log

D. Medical follow ups

IX. Review and Close

Application

The application phase of this Instruct-O-Gram is one in which the instructor should review the practices and procedures of the local, state, departmental and other regulations prior to enacting this as a specific guideline. This program should have considerable hands on practice with the decontamination process and utilized on necessary responses and during drills.

Summary

The information presented in this Instruct-O-Gram is designed to help enhance the training of fire and Emergency medical personnel who may be required to do medical decontamination. This IOG does not substitute in any way for the certification programs set forth by governing training jurisdictions.

Acknowledgment

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